REMARKS

A petition and fee for a one-month extension of time are enclosed.

The indication of allowable subject matter in claims 4-12 is noted and appreciated.

Applicants have attached a replacement drawing sheet that includes a "Prior Art" legend and an annotated drawing sheet showing this change. Applicants have also amended claim 13 to depend from claim 9 in order to overcome the objection due to redundancy. Claims 10-13 were also rejected for informalities and it was suggested that "spring" be changed to "conductor." However, Applicants see no reason to make this suggested claim, especially since there is no antecedent basis for "conductor." If the change was meant to suggest changing "spring" to "connector," Applicants still see no reason to make these changes since these claims are directed to the "spring" component of twist-on wire connectors and not the connector itself. Additionally, line 1 of claims 9 and 14 has been amended to delete --having-- in order to correct a typographical error.

Claims 1, 5, 9, and 13 were rejected under 102(b) over Duve 4,531,016. It was stated that Duve discloses all the features in claims 1, 5, 9, and 13, particularly a spring including a plurality of coils which have a hexagonal cross-section and coils forming an open helix. Although the cross-sectional shape of the insert of Duve more closely resembles a square with a serrated edge and not a hexagon, claims 1 and 9 have been amended to recite that the hexagonal cross-section has at least four substantially equal sides. Also, Applicants fail to see where Duve discloses an open helix as required by claims 5 and 13. The cross-sectional shape of the insert of Duve clearly does not disclose a hexagonal shape that has at least four substantially equal sides.

Therefore, Applicants respectfully request that the rejection of claims 1 and 9 be reconsidered and withdrawn.

Claims 5 and 13 being dependant on newly amended claims 1 and 9 respectively should also be allowable. In addition, claims 5 and 13 are patentably distinct from the prior art and should be allowable. As stated above, Duve does not disclose an open helix.

Claims 2, 3, 10, and 11 were rejected under 103(a) as unpatentable over Duve in view of Ijima. It was stated that Ijima discloses a spring having a hexagonal cross-section defined by first and second surfaces joined at a shell-engaging crest, third and fourth surfaces joined at an electrical-wire-engaging crest, a fifth surface joining said first and third surfaces, and a sixth surface joining said second and fourth surfaces wherein at least one of the fifth and sixth surfaces is generally planar. And the conclusion was reached that it would have been obvious to modify the spring of Duve with that of Ijima. Applicants respectfully disagree with this determination for several reasons.

First, it is improper to combine Ijima with Duve since Ijima is not analogous to the subject matter of the present invention. Two criteria have emerged for determining whether prior art is analogous: 1) whether the art is from the same field of endeavor, without regard to the problem addressed, and 2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. In re Clay, 966 F.2d 656, 658-59, 23 U.S.P.Q.2d 1058, 1060 (Fed. Cir. 1992). The Ijima reference does not satisfy either test.

Ijima is concerned with tension or compression springs and their deflection characteristics. While the term "spring" in the present application is used interchangeably with

the term "insert" as the gripping and holding member of the wire connector, it is merely a term of art. The term "spring" is used only because it describes the coiled appearance of the insert and has nothing whatsoever to do with compression, tension or other shock absorbing springs. The field of endeavor of the present invention generally deals with the joining, holding together and terminating the stripped ends of electrical wires, and specifically through the used of twist-on wire connectors. The field of endeavor of Ijima generally deals with coiled compression and/or tension springs and specifically the deflection characteristics of coiled or spiral compression springs. The subject matter of the present invention and that of Ijima simply do not share the same field of endeavor.

Since the Ijima disclosure is not from the same field of endeavor a determination must now be made as to whether the Ijima disclosure is reasonably pertinent to the particular problem which the Applicants are involved. The problem Applicants are concern with is to lower the cost of twist-on wire connectors without sacrificing performance, that is the ability of the wire connector to grip and hold together the stripped ends of electrical wires. Applicants solve this problem by focusing on the metal insert of the wire connector. Applicants determined that by altering the shape of the insert less material can be used to make it while not affecting its performance. Not only is Ijima not reasonably pertinent to this problem but it is not even remotely pertinent to the problem. Ijima is attempting to make coiled or spiral compression springs that exhibit a parabolic deflection-stress characteristic curve. The compression springs of Ijima are not meant to grip and hold anything and are certainly not concerned with reducing material costs of the spring. While Ijima discloses various cross-sectional shapes of the coils of the compression springs, Ijima is not reasonably applicable to Applicants' problem. Therefore,

Applicants respectfully submit that Ijima is too remote to be considered analogous art and should not be combined with Duve in an obviousness determination.

Even assuming that Ijima is analogous art which can be combined with Duve, which it is not, it would still not be obvious to modify the insert of Duve to have the hexagonal cross-section of Ijima. There is simply no disclosure, suggestion, or motivation to alter the insert of Duve to have the hexagonal cross-section of Ijima. Duve attempts to prevent unwanted separation of the wire connector from the electrical wires by providing an insert that has at least two sharp edged ribs to engage the electrical wires. It would be counter to the teaching of Duve to modify the insert to have a hexagonal cross-section defined by a single wire-engaging crest as required by claims 2, 3, 10, and 11. In other words, Duve teaches away from inserts having only a single wire-engaging edge on each coil or turn of the insert. Therefore, applicants respectfully request reconsideration and withdrawal of the obviousness rejection of claims 2, 3, 10 and 11.

Claims 6-8 and 14 were rejected under 103(a) as being unpatentable over Blaha in view of Cogan. First, it is improper to combine Cogan with Blaha since Cogan is not analogous to the subject matter of the present invention. The two criteria for determining whether prior art is analogous are set forth above. The Cogan reference does not satisfy either criterion.

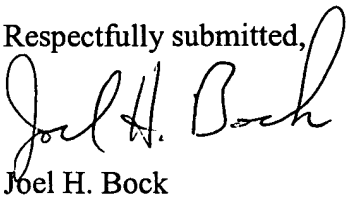
The Cogan reference states that, in general, the field of the invention is that of cable for electrical signal transmission, and in particular, to the field of cable for the interconnection of audio apparatus. This field is far removed from the field of joining, holding and terminating the stripped ends of electrical wires and in particular to twist-on type wire connectors. In addition, Cogan is not reasonably pertinent to the problem Applicants are concerned with. Again, Applicants are concerned with reducing the cost of twist-on type wire connectors without

compromising their performance. Cogan deals with the problem of transmitting audio signals with as little distortion as possible in a durable and flexible cable that can be repeatedly bent by hand. Malleability and electrical signal transmission is not an issue in wire connectors of the present invention since the insert is machine bent and simply provides a mechanical means of holding wires together while insulating the exposed ends. Cogan is just not reasonably pertinent to applicants problem of reducing the cost of wire connectors while maintaining their ability to grip and hold wires together. Therefore, since the Cogan reference is not analogous art it is improper to combine it with Blaha.

Even if Cogan can be considered analogous art, which it cannot, there is no disclosure, suggestion or motivation to alter the insert of the Blaha to have a central bore. As just stated, ease of bending and superior signal transmission are not part of the concerns of wire connector inserts. Indeed, the inserts of wire connectors must be hard and resilient in order to bite into the metal wire. If the material or shape of the insert allows too much malleability, the insert might bend or give instead of biting down into the wire. Furthermore, while Blaha discloses that the cross-section of the coil can be square, round, oblong or elliptical, Blaha does not disclose or suggest that one shape may be superior to another in terms of minimizing the material and thereby lowering the cost of the insert without adversely affecting its performance. Blaha does not provide the motivation to alter the insert to have a central bore. Therefore, Applicants respectfully request that the rejection of claims 6-8 and 14 be reconsidered and withdrawn.

It is submitted that the above amendments place the application in condition for allowance. Accordingly, the application is resubmitted for reconsideration. A favorable action is respectfully requested.

Respectfully submitted,



Joel H. Bock
Registration No. 29,045

Cook, Alex, McFarron, Manzo, Cummings & Mehler, Ltd.
200 West Adams Street - Suite 2850
Chicago, Illinois 60606
(312) 236-8500